Achieving the Triple Aim: Decreasing Use of Inappropriate Telemetry Monitoring

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Boise, Idaho

Objectives

- Learners will understand the appropriate use criteria for telemetry monitoring.
- Learners will learn how to lead a collaborative interdisciplinary team to build an evidence based order set to drive appropriate telemetry use.
- Learners will understand how to implement new practice among RNs and providers to support the new criteria.

St. Luke's Health System, Idaho

Boise Campus

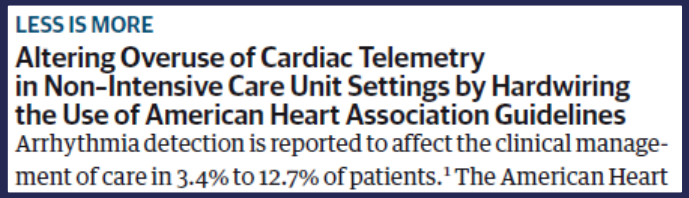
Meridian Campus

Goals of Program

- Align cardiac monitoring (telemetry) with the national standards and evidence.
- Assure the safety of patients.
- Provide appropriate level of care
- Reduce telemetry monitored days.
- Reduce costs associated with telemetry monitoring.

Review of the Evidence

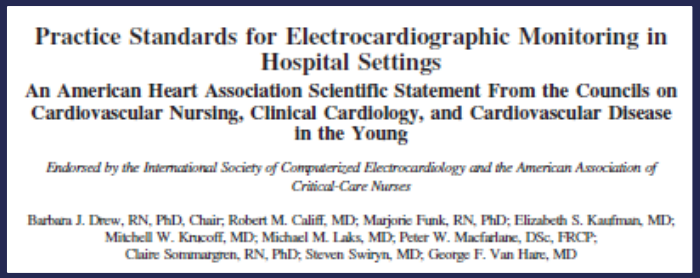
- American Heart Association Guidelines for Cardiac monitoring 2004
- American Heart Association Stroke guidelines 2013
- Support articles: NEJM, JAMA Internal Medicine, AACN, Emergency Hospital Medicine, JC 2014, ECRI (Environmental Risk Communications Inc.)



LESS IS MORE

Altering Overuse of Cardiac Telemetry in Non–Intensive Care Unit Settings by Hardwiring the Use of American Heart Association Guidelines

Arrhythmia detection is reported to affect the clinical management of care in 3.4% to 12.7% of patients.[1] The American Heart

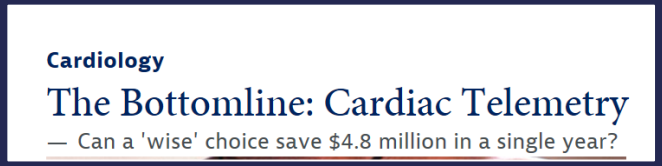


Practice Standards for Electrocardiographic Monitoring in Hospital Settings

An American Heart Association Scientific Statement From the Councils on Cardiovascular Nursing, Clinical Cardiology, and Cardiovascular Disease in the Young

Endorsed by the International Society of Computerized Electrocardiology and the American Association of Critical-Care Nurses

Barbara J. Drew, RN, PhD, Chair; Robert M. Califf, MD; Marjorie Funk, RN, PhD; Elizabeth S. Kaufman, MD; Mitchell W. Krucoff, MD; Michael M. Laks, MD; Peter W. Macfarlane, DSc, FRCP; Claire Sommargren, RN, PhD; Steven Swiryn, MD; George F. Van Hare, MD



Cardiology

The Bottomline: Cardiac Telemetry

— Can a 'wise' choice save $4.8 million in a single year?

AACN PracticeAlert™

☑ *Monitor only those patients with clinical indications for monitoring.* (Level C)

- Collaborate with an interprofessional team to determine those patients in a population or care unit who should be monitored and what parameters to use.
- Use the American Heart Association's *Practice Standards for ECG Monitoring in Hospital Settings: Executive Summary and Guide for Implementation.*[14]

Does Over-Utilization of Telemetry Matter?

- "alarms are intended to alert caregiver of potential patient problem, but if not managed they can compromise safety".

  JC 2014 National Patient safety goal
- "technology is top safety hazard in healthcare". ECRI
  - 72-99% of alarms are false or benign
- Telemetry adds significantly to hospital bills:
  - Additional costly and unnecessary workup

What's the Harm?

- Wasted resources
- Increased RN time
- Unnecessary tests
- Provider time-calls from RNs
- Alarm fatigue
- Increased supply costs
- Overutilization leads to:
  - Delays in bed placement

Internal Audit

- February 2013
- No current standard
- Manual process
  - Diagnosis, rhythms & alarms
- Results
  - 755 patients
  - 30 days
  - 65% didn't meet AHA criteria
  - Consistent with PULSE trial
- Informal surveyed Internal Medicine providers
  - Preferred tele floor
  - Education

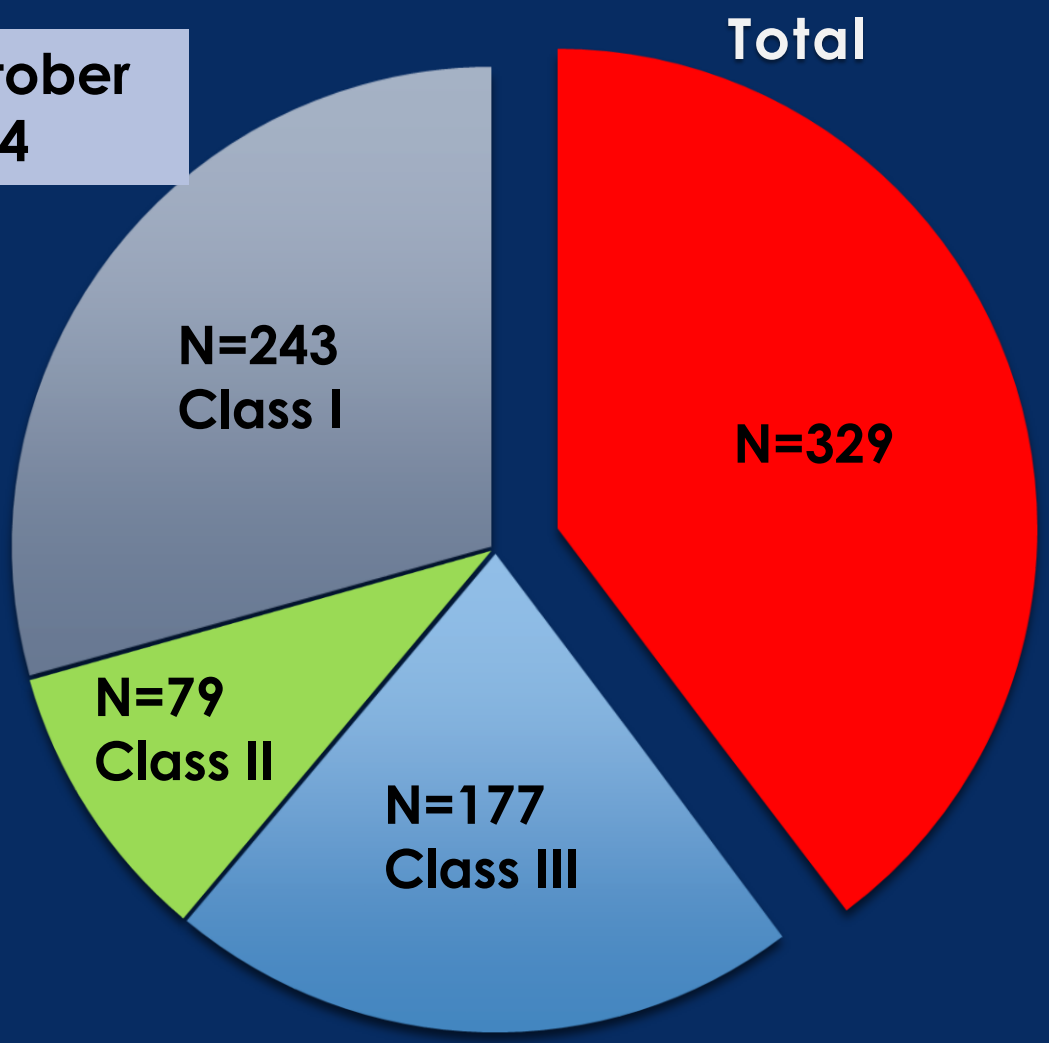
Gathering Support

- Present the evidence
  - Directors, administrators, providers, bedside RNs
- What's the consequence
  - Projected revenue drop
  - Patient safety concern

Support Re-ignited

- Internal Medicine Physician Assistant
- Internal Medicine Medical Director
- Director Physician Practice and Quality
- President and CEO of System
- Repeated survey October 2014
  - Using charge code
  - Diagnosis codes
  - Sorted into AHA classes I-III

October 2014



- Did Not Meet Criteria
- Telemetry For 24 Hrs
- Telemetry For 48 Hrs
- Telemetry for Entire Stay

Class I- Primary cardiac- entire stay
Class II -Cardiac Intervention-48 hrs
Class III-Cardiac history, non-cardiac admission-24 hrs

The Financial Implications

- Finance and revenue department
- Project numbers
  - Gross revenue vs net revenue loss
- Cost (gross)
  - $720/8hrs
- Actual (Net)
  - DRG based payment
- Presented to the CFO & COO

Boise and Meridian Telemetry	
Projected Loss	FY16 Impact
Gross Revenue	19,542,056
Net Revenue	1,031,744

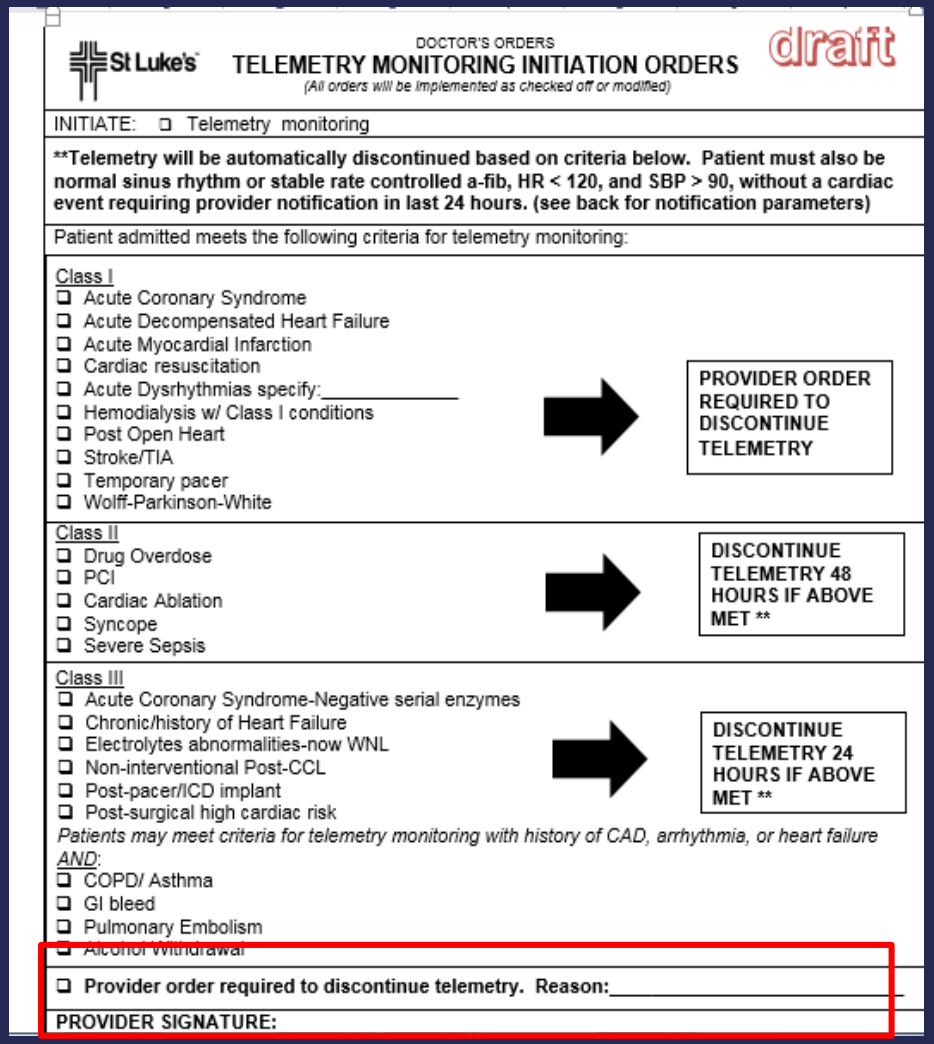
Time to Implement

Collaboration-Who's on the team?

- Providers
- Bedside RNs
- Financial
- Revenue cycle
- Nurse managers
- Monitoring company
- Partner data analyst
- Performance improvement department

The Criteria

- Developing orders
  - Multiple versions
  - Content important
  - Layout was just as important
- Provider buy-in
  - "One more piece of paper"
  - Allow for individual practice



St Luke's

DOCTOR'S ORDERS

TELEMETRY MONITORING INITIATION ORDERS

(All orders will be implemented as checked off or modified)

draft

INITIATE: ❑ Telemetry monitoring

****Telemetry will be automatically discontinued based on criteria below. Patient must also be normal sinus rhythm or stable rate controlled a-fib, HR < 120, and SBP > 90, without a cardiac event requiring provider notification in last 24 hours. (see back for notification parameters)**

Patient admitted meets the following criteria for telemetry monitoring:

Class I
- ❑ Acute Coronary Syndrome
- ❑ Acute Decompensated Heart Failure
- ❑ Acute Myocardial Infarction
- ❑ Cardiac resuscitation
- ❑ Acute Dysrhythmias specify:_____
- ❑ Hemodialysis w/ Class I conditions
- ❑ Post Open Heart
- ❑ Stroke/TIA
- ❑ Temporary pacer
- ❑ Wolff-Parkinson-White

→ **PROVIDER ORDER REQUIRED TO DISCONTINUE TELEMETRY**

Class II
- ❑ Drug Overdose
- ❑ PCI
- ❑ Cardiac Ablation
- ❑ Syncope
- ❑ Severe Sepsis

→ **DISCONTINUE TELEMETRY 48 HOURS IF ABOVE MET ****

Class III
- ❑ Acute Coronary Syndrome-Negative serial enzymes
- ❑ Chronic/history of Heart Failure
- ❑ Electrolytes abnormalities-now WNL
- ❑ Non-interventional Post-CCL
- ❑ Post-pacer/ICD implant
- ❑ Post-surgical high cardiac risk

→ **DISCONTINUE TELEMETRY 24 HOURS IF ABOVE MET ****

Patients may meet criteria for telemetry monitoring with history of CAD, arrhythmia, or heart failure AND:
- ❑ COPD/ Asthma
- ❑ GI bleed
- ❑ Pulmonary Embolism
- ❑ Alcohol Withdrawal

❑ **Provider order required to discontinue telemetry. Reason:**_____

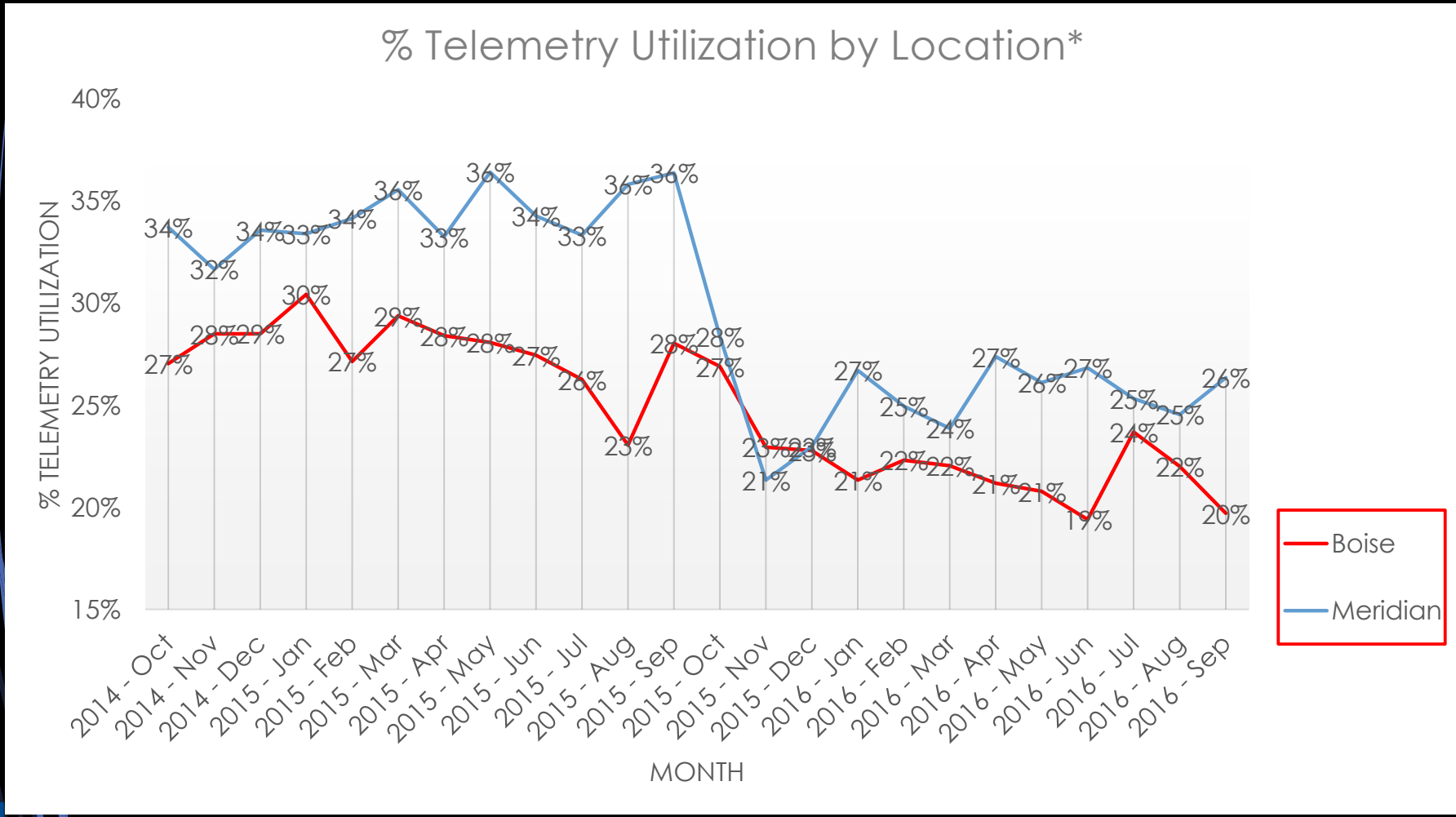
PROVIDER SIGNATURE:

Nursing/Staff Support

- Bedside staff champions
  - Presenting the evidence
  - Developed workflow
- Used Team Work Boards
  - Address their concerns
- Telemetry Clerks-Key to success!
  - Required orders when requested for box
  - Managed time frames- qued RNs of expiring orders

Our Successes

- Intervention started in mid-October 2015
- As of September 2016
  - 23% reduction in telemetry over the first 11 months
  - **Reduced charge to patients of $10.8 million**
- Collaboration with providers
- A couple of updates/clarification to orders


% Telemetry Utilization by Location*
% TELEMETRY UTILIZATION
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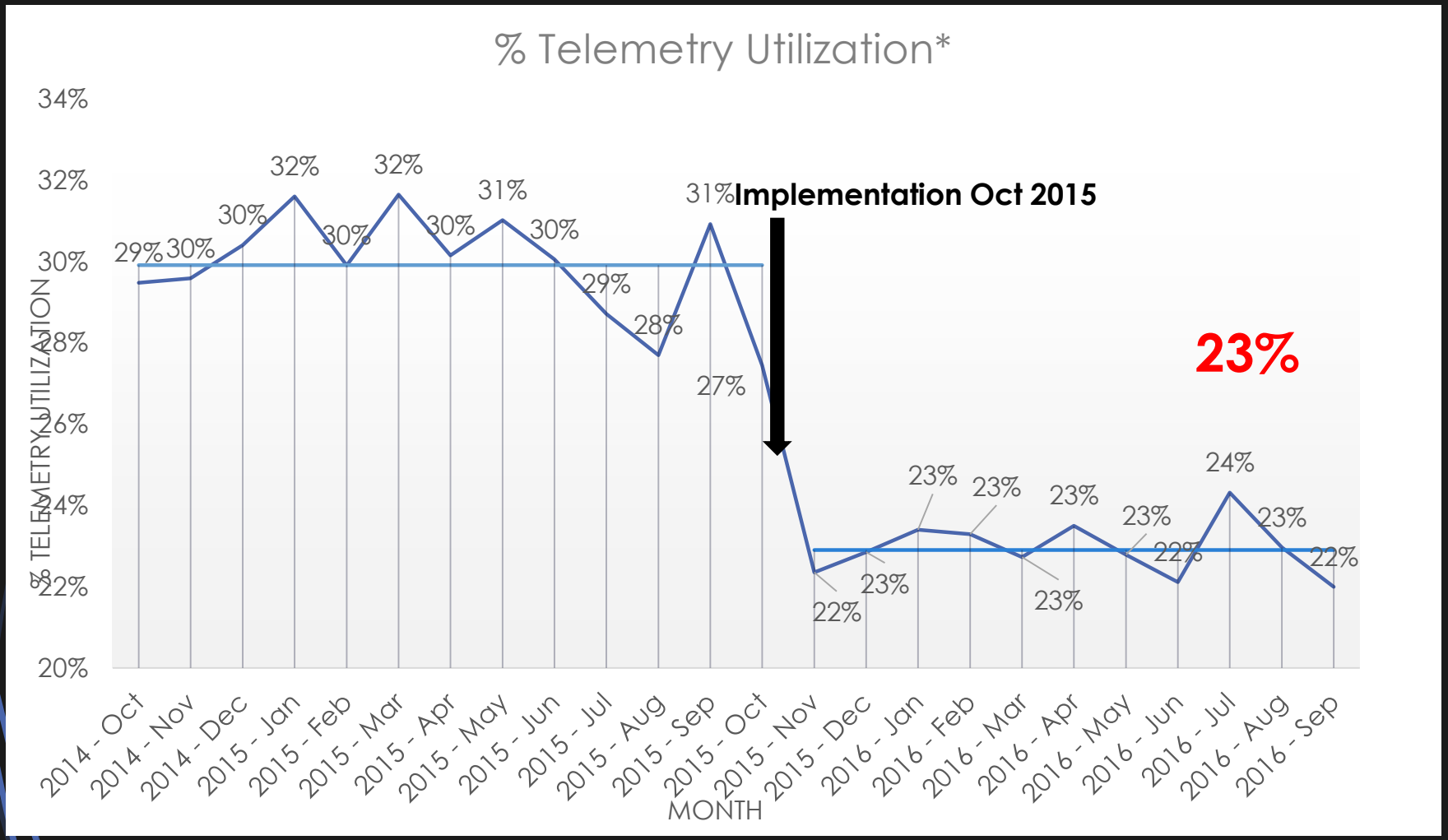
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Moving Forward

- System wide implementation October 2016
- Implemented as a protocol
- Electronic record impact
- Can we reduce more?
  - Better order management
  - Quarterly reports
  - Audit with new medical record

References

- 1994 - Outcomes of patients hospitalized to a telemetry unit. Am J Cardiol. 1994 Aug 15;74(4):357-62.
- 1995 - Role of telemetry monitoring in the non-intensive care unit. Am J Cardiol. 1995 Nov 1;76(12):960-5.
- 1999- Clinical Consequences of electrocardiographic artifact mimicking VT. N Engl J Med; 1999; 341:1270-1274.
- 2000 - Evaluation of Guidelines for the Use of Telemetry in the Non–Intensive-Care Setting. J Gen Intern Med. 2000 January; 15(1): 51–55.
- 2004- AHA Practice Standards for Electrocardiographic Monitoring in Hospital Settings. *Circulation.* 2004;110:2721-2746.

References

- 2009 - Telemetry monitoring guidelines for efficient and safe delivery of cardiac rhythm monitoring to noncritical hospital inpatients. Critical Pathways in Cardiology. 2009;8(3):125-126.
- 2013 – Appropriate Use of Telemetry Monitoring in hospitalized Patients. Current emergency and hospital medicine reports; 2:52-56.
- 2013- American Heart Association- Guidelines for the Early Management of Patients with Acute Ischemic Stroke. DOI: 10.1161/STR.0b013e318284056a
- 2014- Altering overuse of cardiac telemetry in on-intensive care unit settings by hardwiring the use of American Heart Assocaiton guidelines. JAMA Intern Med 2014, Sept 22.
- 2014 -The Practical Use of the Latest Standards of Electrocardiography (PULSE) Trial: Nursing-Focused Intervention Improves Nurses' Knowledge and Quality of ECG Monitoring. 201**4;** 130(2).

Thank You!

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